What is claimed is:

1. A fingerprint recognition sensor comprising:

a CMOS image sensor;

a transparent electrode layer formed at an upper portion of the CMOS image sensor, one terminal of an AC power source being connected with said transparent electrode layer;

a luminescent layer formed on the transparent electrode layer, said luminescent layer having fluorescent particles and a binder;

a dielectric layer formed at an upper portion of the luminescent layer; and

a contamination-resistance film formed at an upper portion of the dielectric layer.

2. The fingerprint recognition sensor according to claim 1, wherein the transparent electrode layer is directly deposited as a thin film on the CMOS image sensor.

3. A method for manufacturing a fingerprint recognition sensor, comprising the steps of:

providing a CMOS image sensor;

directly depositing a transparent electrode layer as a thin film at an upper portion of the CMOS image sensor and connecting one terminal of an AC power source to the transparent electrode layer, said transparent electrode layer being made of a transparent insulating material and a transparent conductive material;

forming a luminescent layer at an upper portion of the transparent electrode layer to generate an optical image;

forming a dielectric layer at an upper portion of the luminescent layer; and

forming a contamination-resistance film at an upper portion of the dielectric layer.

4. The method according to claim 3, wherein a light absorbent layer is coated on the surface of the luminescent layer and diffused to thereby cover the surface of the fluorescent particles existing in the luminescent layer.

5. A fingerprint recognition system comprising:

a CMOS image sensor;

a transparent electrode thin film directly deposited as a thin film at an upper portion of the CMOS

image sensor; and

a fingerprint recognition sensor installed at an upper portion of the transparent electrode thin film.

6. The fingerprint recognition system according to claim 5, wherein the CMOS image sensor includes a ground frame having at least one pin.